

Future forests

Former BTO Director of Science, **Rob Fuller**, discusses woodland policy and the implications for birds.

Forests and woodland are hugely important on so many levels. They are vital in conserving biodiversity, soils and water quality, as well as offering sources of renewable fuel and building materials. In Britain it can be hard to pin down exactly what we mean by the words 'forest' and 'woodland'. An imperfect distinction can be drawn between large, recently created plantations typically dominated by conifers (forests), and broadleaved woodland and small woodlots (woodland). These environments form an immensely complex continuum of habitats for wildlife, making a huge contribution to the national, regional and local populations of many plants and animals.

The expansion of forest and woodland is now a serious political issue with the recognition of its contribution to climate mitigation through the capture and storage of atmospheric carbon. In the 2019 general election, political parties competed in pledging highly ambitious, and probably unachievable, tree planting targets. With just 13% of the UK's land covered by forest, it is the second least forested country in Europe. A massive increase in the UK land surface covered by trees could potentially deliver substantial benefits for human society and biodiversity, but this is not a straightforward equation. Carbon storage is a complex

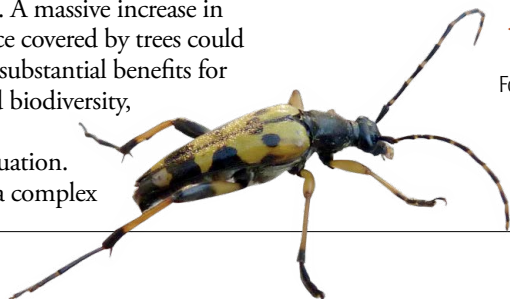
subject because so many factors are involved. At present it is by no means clear how effective, over different timescales, large-scale afforestation will be as a carbon storage strategy in our temperate conditions – the details are all-important.

LEARNING FROM THE PAST

Any net gains for wildlife of forest expansion will depend on heeding the experiences and lessons from large-scale twentieth century afforestation. In particular, creating forests on open land of existing high wildlife or carbon sequestering value (peatlands, heathlands and old grassland) must be avoided. Trees are only one potential nature-based solution for tackling climate change. There is also a risk that land of marginal agricultural productivity will be targeted for planting; such land is often especially rich in plants, invertebrates and birds. For example, BTO research has demonstrated the importance of our upland margins for birds. It would be unfortunate if, in the drive to plant more trees, we heaped further pressure on our

beleaguered populations of breeding waders. Whilst there is a risk of serious trade-offs between delivering perceived climate mitigation and high quality wildlife habitat, integrated thinking could produce lasting benefits for both people and wildlife.

It may seem obvious, but cannot be stressed too frequently that, for any forest species, not just birds, forest cover is a very poor measure of the quality of habitat. Increasing the area of land under trees will not, in itself, improve the status of many of the species that have declined in recent decades. Forests and woodland are enormously varied and complex environments that are equally varied in their wildlife communities. Within any area of forest or woodland only a small part of the area may be suitable for any particular species. Woodland bird species all differ, in some cases in subtle ways, in their habitat needs and preferences. Suitability for most songbirds may be determined by the presence of certain types of vegetation structures, or particular trees and shrubs. These features are linked with the provision of critical resources and functional needs that differ from one species to another. Of course, many other factors could be relevant, including characteristics of the surrounding landscape. However, most species will not thrive if basic local habitat needs are not met. Exactly how humans design new



◀ Woodland birds' prey can have specific habitat needs. For example, longhorn beetles require dead wood for larval development but the adults often visit flowering bramble in glades and forest edges.



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forests and treat existing ones, therefore, has an overwhelming effect on their suitability for different bird species. Many attributes of woodland are determined by management activities: the species of trees, the age and size of trees, canopy openness, quantity of dead wood, the complexity of understorey etc. These in turn influence the nature of wildlife. Continuity of management – especially in those rare cases where coppicing or wood-pasture has been practised over hundreds of years – is an additional crucial factor determining habitat suitability for weakly dispersing species of plants, fungi and invertebrates.

Whether the new forests will actually provide great opportunities for wildlife will depend substantially on how they are conceived and subsequently managed. They could provide a wide range of habitats and associated resources for multiple species, including many that have become

scarcer during the last century as a result of habitat loss and deterioration. Achieving this will require creating different kinds of forest in different places, adopting a variety of management approaches, acknowledging the importance of open space and different successional stages, and utilising mixtures of planting and natural regeneration. Effective deer management will be essential (this issue is critical for much of our existing woodland too). Rewilding and large woodland nature reserves have a role in delivering complementary habitats, such as wood-pastures and old-growth, to those that are likely to dominate commercially productive woodland. The creation of mosaics of open grassland and tree-covered land could be enormously valuable – perhaps emulating the wonderful ‘wood-meadows’ of Fennoscandia and the Baltic States?

NATURE-BASED SOLUTIONS

Avoiding the creation of uniformity in the rush to plant as many trees as possible is a major challenge. This is acknowledged in the discussions around how to make forests ‘resilient’ in the face of climate uncertainty and the spread of tree diseases in our interconnected world. Understandably, the selection of tree species is a major focus of attention and there is wide agreement that mixtures of species will play a much larger part in forestry than in the past.

► Crossbills expanded their UK range hugely in response to afforestation in the last century. Could other forest birds take advantage of a new phase of afforestation?

Mixtures of native and non-native species are likely to be widely adopted. From a wildlife perspective, the understorey shrubs and small trees are vitally important, and planting strategies need to incorporate these just as much as the canopy species. There is little available information that can help us predict how birds and other wildlife will respond to novel tree mixtures – clearly an important area for future research.

Wildlife, and indeed people, thrive on diversity and complexity. We cannot be sure how wildlife will respond to climate change and other future stresses, but enhancing habitat complexity at a range of scales is one of the best strategies available to counter this uncertainty. Through its research and advice, BTO is part of a wider ecological community that can help deliver nature-based solutions to our environmental problems that embody diverse opportunities for future wildlife. ■

Find out more

Mikusiński, Roberge & Fuller (eds.) 2018. *Ecology and Conservation of Forest Birds*. Cambridge University Press.